details fully disclosed to the public."[41] Primosphere, as discussed in its initial comments, is committed to working within the appropriate industry organizations to develop a common receiver standard. As suggested by Ford, consumers will benefit if this receiver standard accommodates both satellite and terrestrial digital audio. Primosphere agrees. As for assurance of adequate link margin, Primosphere is engaged in discussions with satellite manufacturers concerning the means of achieving suitable link margin in a mobile environment and supports the industry-based approach advocated by EIA.

None of these technical matters should delay the licensing process. Because of the long lead time required for satellite construction, these processes should occur in parallel with satellite construction. No rationale exists for delaying licensing until the resolution of these matters.

B. The Commission Should Adopt a Spectrum Assignment Policy Which Will Facilitate International Coordination.

In order to facilitate coordination, the Commission should initiate international coordination in conjunction with all licensed SDARS systems and should assign specific frequency blocks following conclusion of this coordination. Assigning frequency blocks prior to coordination could create disincentives on the part of one or more licensees to cooperate fully in coordination. In the absence of some agreement among the licensees, frequency blocks could be assigned by lot after the conclusion of the coordination.

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[41] Supra, at p. 3.

C. Standards for Receiver Interoperability and Tunability Should Be Left to SDARS Licensees and Manufacturers.

As evidenced by the unanimous support of both the proposed providers of SDARS services and the manufacturers who would build the SDARS receivers, the Commission should allow industry to develop standards for receiver interoperability and tunability. This process is well underway and thus there is no need for formal FCC action at this time. The long delays associated with the Advanced Television Proceeding argue strongly in favor of avoiding the delay accompanying a Commission mandated proceeding.

D. Minor Modifications Should Be Made to CD Radio's Proposed Rules

CD Radio has submitted as part of its comments proposed revisions to the Commission's rules for licensing and operation of SDARS systems. Primosphere agrees with most, but not all of the proposed revisions. Specifically, Primosphere cannot agree with CD Radio that spectrum assignments be made prior to coordination with Canada and Mexico. Primosphere believes that it is in the interest of the United States to engage in such coordination with all the licensees prior to determining individual frequency assignments.[42] This approach will provide the maximum flexibility for the United States in such coordination and will ensure that all licensees have an equal stake in limiting any constraints that might result from the coordination. Following the conclusion of the coordination, the Commission could provide an opportunity for the licensees to submit a mutually agreed plan for spectrum assignments. Failing the submission of such a plan, Primosphere suggests that the Commission assign spectrum by lot.

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[42] Primosphere also agrees with EIA in urging that the United States commence coordination with Mexico and Canada without waiting for the conclusion of the licensing process.

CD Radio's proposal in rule 4(b)(2)(ii) that a licensee certify that its system "includes a receiver design that permits users to access all operational DARS systems" is not broad enough. This rule should be modified to require certification that an licensee's proposed receiver design permits users to access all DARS systems that are operational and under construction. CD Radio's proposal would allow the first operational systems to exclude from their receiver design systems that are under construction, but that become operational at a later date. Such a rule would not promote the goal of receiver interoperability and tunability.

E. The NAB Proposed Satellite DARS Channel Plans are Flawed and Unsuitable for Satellite DARS.

In its comments, the NAB proposes a channel plan for use by the FCC in licensing satellite DARS service providers.[43] Although Primosphere is pleased that the NAB supports licensing of the entire 50 MHz band[44] and that the NAB has based its proposed channel plans on such an allocation, the NAB channel plan must be rejected.

The NAB channel plan is unsupported by any technical or economic analysis and is not a "plan" at all. It is simply an arithmetic division of the 50 MHz contained in the 2310-2360 MHz band into ten equal 5 MHz segments without frequency re-use or 19 equal 5 MHz segments with frequency re-use. The NAB makes no attempt to justify the viability of this arbitrary channel plan with any analysis that supports the economic viability of service providers operating with only 5 MHz of bandwidth. It is interesting to note that the NAB states that "Under both plans, satellite DARS proponents who rely on spatial diversity would most likely need to acquire multiple frequency blocks . . . ."[45] By this statement, the NAB

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43 NAB comments, page 59.

44 Supra, page 61.

45 Supra, page 60, 61.

clearly admits that the 5 MHz allocations contained in their channel plan are inadequate. The NAB does not describe how satellite DARS service providers might acquire additional spectrum to correct the flaws in the channel plan proposed by the NAB.

The NAB proposed channel plan is completely unsuitable for satellite DARS service and should be rejected.

F. The Cracker Barrel Channeling Plan is Unsupported, Misleading and Without Engineering Merit.

Cracker Barrel uses the NPRM comment process to introduce its technical approach to an SDARS system. It presents a poorly described system based on CDMA (Code Division Multiple Access) technology that purports to provide a quantum leap in spectrum efficiency. Cracker Barrel states, without supporting analysis, that its approach will greatly expand the number of channels in the 50 MHz band and allow upwards of 15 service providers without cross-polarization based frequency re-use. Cracker Barrel goes on to describe a plan for service providers to share satellites. The very basic assumptions used by Cracker Barrel are flawed and the design as described is not fully formed. CDMA has a place in communications but it cannot be used here to work alchemy as a spectrum multiplier.

In its comments to the NPRM, Cracker Barrel states that "As shown in Figure 1, approximately 465 compact disk quality, 128 kbps channels can be accommodated in the 50 MHz allocated to DARS." No calculations are given to support this statement and the most basic communications system design parameters are not given. The referenced graph of Figure 1 in the Cracker Barrel filing is merely an exercise in arithmetic based on the unsupported assumption that 465 channels can be accommodated in this band. The graph is mislabeled and does not show "CDMA Channel Capacity" nor does it in any way support

Cracker Barrel's channel capacity allegations. Through this misleading graph, Cracker Barrel attempts to cover up its lack of engineering support behind its purported engineering breakthrough.

Although the system details are almost non-existent, a footnote alludes to a ten beam system using frequency re-use. Using its own numbers, the Cracker Barrel system provides 465 channels divided among ten spot beams not 465 CONUS coverage beam channels. This is a very significant flaw in its system design, one that is concealed and not readily evident to the reader.

The use of spot beams makes the Cracker Barrel service regional and not a national radio service as planned by Primosphere. In reality, Cracker Barrel proposes a system with 465 regional channels divided among ten spot beams. This is the equivalent of only 46 national channels, clearly not an enhanced service. Primosphere believes that the public is best served by a SDARS service based on a CONUS coverage beam and available in the same form across the continental United States. A regional service like that proposed by Cracker Barrel may help it in funneling business to its chain of restaurants at the expense of local radio.

G. Cracker Barrel's Allegations of CDMA Spectral Efficiency Are Totally Unfounded.

In its filing, Cracker Barrel touts the introduction of CDMA technology into satellite DARS as a significant engineering breakthrough that miraculously increases spectral efficiency by a factor of ten. Such engineering breakthroughs in satellite communications are rare and almost never come from organizations that are as new to the field as Cracker Barrel. Clearly, restaurateur Cracker Barrel is either misrepresenting its allegations of channel capacity or was itself misled.

The SDARS applicants have been immersed in satellite technology for many years and have continuously tuned their system designs as such technology evolves. At the cost of millions of dollars and years of effort the SDARS applicants have studied the technical and economic applicability of numerous developing technologies. CDMA is not a new or emerging technology. It has been used in satellite communications for many years. Its characteristics are well known to satellite communications engineers and in fact, its use has been proposed by one of the current SDARS applicants.

Contrary to the assertions of Cracker Barrel, a reasoned comparison between CDMA and TDMA with the same system characteristics and service requirements will result in very similar channel capacities.[46] For example, with a CONUS coverage beam of single polarization and 50 MHz of bandwidth, one could calculate a channel capacity of approximately 310 national service channels at 128 kbps per channel. Similarly, with a TDMA system, using ten spot beams of single polarization and 50 MHz of bandwidth, one could calculate a capacity of over 600 regional channels at 128 kbps per channel. These calculations omit such necessities as data error protection encoding, guardbands between carriers, system overhead, etc. Using TDMA with a CONUS beam and taking these parameters into account, a practical estimate is that 50 MHz will support 145 national service channels.

It is important to note that using CDMA, one cannot simply expand channel capacity without limit. Each CDMA signal is coded so that it can be readily selected from the other signals simultaneously sharing the channel. As the number of CDMA channels increases one exceeds the number of truly orthogonal codes and the distinguishing code of each channel

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[46] See Attachment B, affidavit of Richard S. Cooperman.

starts to be less effective. This is known as loss of orthogonality. When orthogonality is lost, the simultaneous channels interfere with the signals sharing the band. This reduces system channel capacity and sets an effective limit on the number of CDMA channels.

With a large number of carriers, as in the proposed Cracker Barrel system, one must take into account the reduction in capacity due to the loss of orthogonality between the codes. There is no evidence that the Cracker Barrel design takes this effect into consideration in its capacity calculations. This effect is compounded as one adds carriers and in a system where upwards of 15 service providers, each with multiple carriers sharing spectrum, the reduction in capacity will be very significant.

CDMA is clearly not a magic spectral efficiency enhancer and Cracker Barrel has not provided the barest support for its assertions as to channel capacity. Without its alleged channel capacity breakthrough, the Cracker Barrel design evaporates and with it, its justification for re-opening the application cut-off.

H. The Commission Can Authorize Feeder Links Without Delay.

Although two entities have expressed their concern that use of feeder link spectrum in the 8 GHz band be coordinated in order to avoid interference, no substantial opposition to use of this spectrum for SDARS feeder links has been voiced. This coordination can occur and Primosphere has already expressed its willingness to participate in such coordination efforts. Because SDARS feeder link earth stations do not have significant geographic limitations on where they can be located, Primosphere does not expect that coordinating use of this spectrum will be difficult.[47]

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[47] Primosphere notes the Comments of Local/Qualcomm Partnership, L.P. ("LQP"), which plans to use the 6875-7075 MHz band for feeder downlinks for its MSS system. Primosphere sees no impediment to coordinating with the LQP reverse-band working feeder links.

Primosphere opposes the suggestion of the Society of Broadcast Engineers ("SBE") that use of this spectrum should be secondary for SDARS. This spectrum is currently allocated on a co-primary basis for terrestrial fixed services, mobile services and fixed satellite services.[48] The suggestion that SDARS providers be forced to accept any interference caused by electronic newsgathering or fixed point-to-point services, in effect making them a secondary service, should be rejected as unnecessary and contrary to current law. In addition, the scope of the "keep-out-zones" requested by SBE should not be decided in advance of coordination. This issue can best be decided during coordination. Deciding this issue prior to coordination would upset the negotiating positions of the respective parties and may cause the selection of a zone that is either larger or smaller than is actually needed.

VII. CONCLUSION

For the foregoing reasons, the Commission should proceed with licensing the full 50 MHz of spectrum to the current four SDARS applicants under the negotiated sharing scheme. In developing service rules and regulations, the Commission should adopt the least restrictive regulations for the Satellite Digital Audio Radio Service, allowing market forces and negotiations to determine the best form of service. In addition, the because the four applicants can share the spectrum without interference, no mutual exclusivity exists between

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[48] ITU Radio Regulation 8-135 (1994).

the applicants warranting the use of auctions.

Respectfully submitted,

PRIMOSPHERE LIMITED PARTNERSHIP

By: Howard M. Liberman

Howard M. Liberman
Robert Ungar

Arter & Hadden
1801 K Street, N. W., Suite 400K
Washington, DC 20006
(202) 775-7100

and

Leslie A. Taylor
Guy T. Christiansen

Leslie Taylor Associates, Inc.
6800 Carlynn Court
Bethesda, MD 20817-4302
(301) 229-9341

Its Attorneys

October 13, 1995

ATTACHMENT A

STATEMENT OF CLIFFORD N. BURNSTEIN
CONFESSIONS OF A SATELLITE DARS APPLICANT, PART 2

I, Clifford N. Burnstein, hereby submit this statement with regard to FCC IB Docket No. 95-91. I am co-president of the corporate general partner of Primosphere Limited Partnership. My background and qualifications are on file in this proceeding in Appendix A to the "Comments of Primosphere Limited Partnership," submitted on September 15, 1995, entitled "Confessions of a DARS Applicant" ("Confessions"). The following are some of my reactions to the comments submitted in this proceeding by other parties.

In looking over the comments for the NPRM, one theme stands out: ***The Listeners do not think they have the same range of choices as the broadcasters think they provide.*** On the one hand, you have religious, educational, cultural, rural, ethnic and children's groups — the underserved — in favor of Satellite DARS. On the other hand, you have a special interest group — the NAB and its members — against. Given the difficulty in rousing non-economic interests to speak up about anything, the range of support for Satellite DARS from the submitted comments is truly impressive and probably represents just the tip of the iceberg.

The NAB filings are almost sad to read — their theme is resistance to change. There is almost as much written about Wal-Mart and McDonald's changing a way of life as there is about Satellite DARS. The landscape of America is changing — and, as always, there are winners and losers. The NAB has glorified the sad stories and asked the Commission to freeze time.

If the Commission goes forward with Satellite DARS, the NAB would still try to sabotage it — by having the Commission cut the 50 MHz into tiny 5 MHz blocks. That way the Satellite DARS operators can have a choice: poor quality or limited channel selection. At

a time when projects like Globalstar and Iridium are having trouble raising money,[1] the NAB would like nothing better than to have the Satellite DARS proponents face such unfavorable prospects that financing will be impossible to come by.

Then, of course, the NAB suggests reopening the Satellite DARS processing round to allow "other players to bring their expertise and resources to the provision of Satellite DARS."[2] Could these "other players" be the radio billionaires[3] that didn't bother to read Broadcasting or Radio & Records in 1992 to learn about the cut-off date for Satellite DARS? Maybe after almost three years of beating the drums for Satellite DARS (including numerous appearances on NAB panels), the four applicants have actually convinced these formerly skeptical "other players" that satellite radio may be an exciting new investment.

If none of these acts of sabotage work, the NAB suggests limiting Satellite DARS to subscription services only, despite the NAB's own "Attachment 5" — the Opinion Research Corporation's survey that shows almost twice as much public interest in a free advertiser supported service than in a $5.00 per month subscription service (p. 5).

I know it's old news already, but I've attached a list of the public interest arguments in favor of the Primosphere system.[4] At the same time, our best analysis indicates that Satellite DARS will have the most minute effect on terrestrial radio profits even when Satellite DARS is available in every household.

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1 See Barron's, October 8, 1995.

2 NAB Comments, p. 58.

3 See Exhibit 1.

4 See Exhibit 2.

So, here's the match-up: a prospective dozen or so "radio billionaires" versus Satellite DARS applicants with no licenses, no financing in place, with service to begin in 2000 at earliest with no installed base of receiving equipment at that time. Primosphere is ready for the challenge. Primosphere is ready to fulfill all the commitments to programming in its application and subsequent filings. All we are asking for is a chance to serve the public with 12.5 MHz of the highest quality sound possible.

Attached hereto, as Exhibits 3, 3-A, 3-B and 4, are my further thoughts and analysis in response to the NAB's comments and attachments thereto.

Respectfully submitted,

PRIMOSPHERE LIMITED PARTNERSHIP

By:_____
Clifford N. Burnstein
Co-President,
Primosphere Corporation (the sole general partner of Primosphere Limited Partneship)

October 13, 1995

EXHIBIT 1

1995 RADIO BILLIONAIRES

	Name	Market Capitalization[1] (Millions of Dollars)
1	Capital Cities/ABC Disney Combined	18,654 33,230 51,884
2	Viacom	29,848
3	Westinghouse CBS Combined	7,798 5,673 13,471
4	Gannett	8,048
5	Cox	Private
6	Infinity	1,567
7	Clear Channel	1,383
	At 7% yearly growth rate, the following four companies will become "radio billionaires" while Satellite DARS is in its infancy.	
8	Evergreen[2]	668
9	Chancellor/Shamrock	Private
10	Westwood One	597
11	Citicasters	533
	Bubbling Under . . .	
12	Emmis	492
13	American Radio Systems	457

All groups listed (except Westwood One, the leading producer and distributor of nationally sponsored radio programs and the second largest radio network) are in the top 16 radio groups in estimated 1995 station revenues. SOURCE: James H. Duncan, Jr., Duncan's Radio Comments, August 1995.

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[1] (Share Price x Number of Outstanding Shares) + Total Debt. SOURCE: Value Line Investment Survey, September 22, 1995.

[2] With Pyramid acquisition will approach "Billionaire" status.

EXHIBIT 2

PUBLIC INTEREST ARGUMENTS

Satisfies Commission's goals of accessibility and competition and preserves America's music heritage by narrowcasting.

1. **Serves disenfranchised audiences.**

   a. Rural population:

   - Almost 9% of U.S. population can receive 5 or fewer FM services.
   - Over 23% of U.S. population receives 9 or fewer FM services.
   - Over 50% of U.S. land area receives 5 or fewer FM services.
   - Almost 80% of U.S. land area receives 9 or fewer FM services.

   b. Unhappy local listeners: In average Arbitron market almost 30% of radio listening is either to non-listed (usually non-commercial) or "below-the-time" stations (outside of market).

   c. Underserved demographic groups: Children and elderly (mass advertisers are not interested in them).

   d. Eclectic music fans: Only a handful of stations provide 24 hour programming for serious fans of jazz, classical, folk, blues, bluegrass, soul and international music.

2. **Voluntary public service:** Primosphere has offered to give public radio one music and one non-music channel. We will run a reading channel for the visually-impaired. We will devote one channel to children's programming. Primosphere will provide nationwide access to the Emergency Broadcasting System and provide local emergency coverage on a designated channel as needed.

3. **Preserve America's musical heritage:** Folk, jazz, blues, bluegrass and soul music will become history to be studied in libraries and museums without the dedication of Primosphere's national programming.

EXHIBIT 3

MY RESPONSE TO THE NAB'S STUDIES:

1. Strategic Policy Research Study of six small-town radio markets (Attachment 1).

It stresses the value of local broadcasting in these markets. (Comments, p. 35.) "Local radio markets are highly competitive, providing listeners with a broad array of program choices." Here are their six case studies:

Actual Market	Number of Stations	Number of Owners	Number of Formats
Enid[a]	5	3	4
Coalinga-Hanford[b]	3	3	3
Coudersport	2	1	2
Laconia	3	3	3
Longview/Kelso[c]	5	3	3
Morgan City	2	1	2

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[a] Spring 1986 Birch (now out of business) survey showed that the No. 2 and No. 3 most listened to stations in Enid were from Oklahoma City (98 miles away). More than 30 percent of all listening for just these two stations! This bolsters our point about listeners "voting with their ears" away from local radio when the choices are limited. These people will be the most likely adopters of Satellite DARS and they are already lost to small market local radio. (Data from James H. Duncan, Jr., American Radio Small Market Edition 1986.)

[b] Actually, these are two small markets 45 miles apart. The two Hanford stations in their study have a combined 1.0 rating in the Visalia-Tulare-Hanford ARB. The Coalinga station (located in Fresno County) does not show up in the Fresno ARB. (Fall 1994 Ratings). (Data from James H. Duncan, Jr., American Radio 1995.)

[c] Winter 1995 Birch survey showed that the No. 3 and No. 4 most listened to stations in Longview-Kelso were in Portland (40 miles away). James H. Duncan, Jr. and Christine Woodward, American Radio Small Market Edition 1985.

The data in this table contradict the idea that the markets are competitive (two have owner monopolies). It also shows the lack of format choices. When listeners have distant market signals to listen to, they do.

2. An Analysis of the Number of Formats Offered in Arbitron Market (Attachment 4)

NAB STATEMENT P. 41: "Cheyenne has 11 different format types by stations located in Cheyenne."

"Bismarck has 13 different formats on Bismarck stations."

ACTUAL: Only 5 rated Cheyenne stations (1 now dark)

FM = 3 CHR (now dark), Country, AC

AM = 2 News/Talk, Oldies

ACTUAL: Only 8 rated Bismarck stations (6 formats)

FM = 5 Country (2), CHR, Classic Rock, Religion

AM = 3 Country, AC, Oldies

BIA - Investing In Radio '95 Market Report

James H. Duncan, Jr. - American Radio Small Market Edition 1994

I believe that the only way the NAB can get these figures is by using day parted formats on non-commercial stations [or possibly they mistake Laramie (50 miles away) for Cheyenne].

Philosophically, though, why should someone in Bismarck or Cheyenne have to accept fewer format choices than someone in Minneapolis or Denver? Are some Americans less entitled by the place they choose to live? The spectrum is available to redress this inequality.

3. Opinion Research Corporation (ORC) - Estimating the Audience Diversion from Broadcast Radio by Satellite DARS (Attachment 5) - National Survey.

ORC, p. 6: "Initial interest levels [in DARS] were high but dropped rapidly when subscription fees were introduced. However, when describing a scenario of no fees, but with commercials, the interest rebounded to levels actually higher than the first scenario (commercial free, no price mentioned) described!"

ORC, p. 7: "By adding the constraint of having to pay a small monthly fee to receive DARS, the overall interest level dropped from 48% to 28% of the respondents."

ORC, p. 8: "Having faced the prospect of paying for a popular service, when the scenario changed to a no fee service but one that had commercials, the interest levels rebounded quickly. Overall, the interest in a commercially supported, no fee service was actually higher (50% vs. 48%) then the commercial-free service initially described."

MY COMMENT: Thank you. Primosphere has been the only DARS proponent to argue in its application and through all its comments for a commercial-based system. The ORC survey agrees with Primosphere that it has proposed the consumer's most desired DARS service. Groups most interested in DARS (p. 5) were aged 18-44, Black and Hispanic, low and middle income groups, and large families. Primosphere's vision of Satellite DARS can fulfill the Commission's public service desire for universal access and more consumer choice.

ORC, p. 10: "Overall, the average respondent would listen to 18.6 hours per week for DARS. While some of this time would come from activities devoted to radio listening, it could also come from other activities. However, 20% of the sample said they would listen to less radio if they had a CD-quality satellite radio service."

MY COMMENT: As expected, this indicates that overall radio listening (including DARS) would increase as more format-choices are available. This is more than a zero-sum game.

ORC p. 10: "Overall, with DARS, radio listening on an hours-per-week basis, would decline 11.6%. This 11.6% is an overall figure including all respondents, not just those who indicated they would listen less to radio with DARS." [Emphasis in original.]

MY COMMENT: In "Confessions," I estimated that DARS would achieve a 20% listening share. The ORC numbers for every demographic segment show less than a 20% loss of terrestrial radio listening with an average loss of 11.63%. By 2014, with only a likely 50% household penetration, terrestrial radio lost listening to DARS may well be on the order of 6%. Also, don't forget that the average market loses nearly 30% of its listening already to below-the-line (out of market) and non-commercial stations. If the 6% listening loss is applied only to the 70+% local commercial radio listening share, that projected loss decreases to less than 5% by 2014. Even at full household penetration, we're talking about a less than 10% loss of terrestrial listening, possibly by 2024 when terrestrial radio may be (at a 7% annual growth rate) an $80 billion dollar per year industry. At full strength, Satellite DARS would just take a fraction of a point away from terrestrial radio's long term growth rate of revenues. The reduction of the rate of growth of profits would be even less given radio's favorable economic characteristics. (See Exhibit 3-A, "What 'real' growth does for radio's profits.")

4. Kagan Media Appraisals "The Economic Impact of Satellite-Delivered Radio On Local Stations." (Attachment 9)

Footnote 72 (p. 29) of the NAB's Comments: "The Kagan study proffers that the projected effects, and more, will occur after substantial numbers of DARS receives have penetrated the market." [Emphasis in original.]

This caveat appears on both pages 2 and 3 of the Kagan study. In the Statement of Primosphere L.P., we argued[5] that the most successful new technologies (cable TV,

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[5] "Confessions," pp. 2-3.

cassettes, CDs) take 10 years to reach 40-50% of all households. With the delays in licensing and the time needed to build and launch, we established 2014 as our hypothetical 50% household penetration date. By that time, terrestrial radio will be a $40 billion a year business, assuming a 7% yearly growth rate (which is below historical norms).[6] So, all of Kagan's calculations and conclusions are groundless, since they are based on the effect of immediate 100% household penetration of Satellite DARS on today's radio industry. Impossible.

KAGAN P. 7:	"National advertising generally is the 'most expensive business' to a radio station because it costs the station the most to sell it . . . . The smaller the station and the smaller the market, the less, if any, national advertising that will be placed."
MY COMMENT:	Since we're only impacting national advertising, Primosphere impact on radio station profitability will be less than the percentage loss of revenue, and the smaller the market, the smaller, if any, the impact.
KAGAN P. 14:	"The average percentage of people using radio grew from 15.4% in 1980 to a high of 17.53% in 1989 . . . based on average quarter hour listening."
MY COMMENT:	As predicted, as the number of stations increased from Docket 80-90 (Drop-ins) and Move-ins (small markets to big markets), the audience responded to their greater number of radio choices by increasing its listening more than 13%.
KAGAN PP. 14-17:	"Kagan tries to determine the "fragmentation" effect on radio profits. Uses Austin 1985-1993 as an example.[7]

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[6] According to the Radio Advertising Bureau, through August 1995, year-to-date business is 10% higher compared to the same period in 1994. Radio and Records, October 6, 1995. A good head start on the Primosphere prediction (well over trend)!

[7] See Exhibit 3-B.

PROBLEMS WITH THIS APPROACH:

(1) Kagan's "fragmentation" occurred virtually overnight (5 new viable stations in 18 months in Austin). Satellite DARS will phase in over 20 years.

(2) Terrestrial fragmentation has virtually ended now that the allotment tables are nearly filled up, so that radio can enjoy the positive explosive effect of real growth on profits[8] for the 20 years until Satellite DARS becomes much of a factor.

(3) Kagan's time frame conveniently ends in 1993 — right before the big boom in radio advertising and after some of the worst years ever recorded.[9]

(4) Kagan posits that Satellite DARS is the equivalent of six local FMs dropped in (something like the neutron bomb - kills everybody, but leaves the buildings intact). This kind of effect is totally out of proportion to that estimated in the NAB's Attachment 5.

KAGAN
PP. 18-19: KAGAN uses the PRIMOSPHERE 10% of national revenues approach to calculate station cash flow decreases.

MY COMMENT: We agree! Even in 1994 dollars, the amount of cash flow decrease per Kagan is less than 10% in any size market. By 2014, we are talking about a truly small effect — under two percent.

5. Radio Station Financial Picture, Mark Fratrik, Ph.D. (Attachment 13)

The NAB loves to trot this one out. Using 1991 data (remember, probably the only year in the last 30 when revenues decreased — see note 9 above), they show the radio industry in a precarious financial position. Fortunately, this study is at odds with everything

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[8] See Exhibit 3-A.

[9] "[1991] is the first annual decline in radio revenue since at least the early 1970's and probably since the mid 1960's." James H. Duncan, Jr., Duncan's Radio Market Guide 1992 Edition.

that everybody knows about today's radio. Revenues are booming, station prices are zooming. Is it possible that these "losers" actually pay off large amounts of interest on their 1980s-incurred debt? Is it possible that their owners and their families are generously compensated for the work they do?

6. Miller, Kaplan, Arase & Co. Report. (Attachment 14)

This study shows the potential effect of 10% revenue loss in small market situations: a very weak showing.

(1) These stations receive virtually no national revenue.

(2) There are no ratings (ARBs) in any of these markets, so local advertisers have no way of determining if there is less of an audience.

(3) Virtually no local advertisers anywhere buy on a cost per thousand basis. The actual number of persons listening to these stations is not only unmeasurable, but also irrelevant.

(4) The ORC study (Attachment 5) provides support for the argument that local stations will lose 10% of their audience to Satellite DARS only if there is 100% household penetration of DARS revenues (by 2024, if we're lucky). In 30 years, even these small market stations will be highly profitable at 3.5% per year real growth.

What does this study prove, anyway?

Since Kagan "just happened to select" Austin 1985 - 1993, I selected the 10 markets preceding and following Austin in the Duncan book and I brought it up to date by going through 1994.

Market Size (1985/1993	Market 1985	Market Revenues		Viable Stations		Mean Share Points		Estimated Revenue for Mean Station	
		1985	1994	1985	1994	1985	1994	1985	1994
61-54	Austin	27.6	32.4	11	14	7.4	5.9	2.51	2.32

Austin tripled revenues between 1980 (9.1) (FCC data quoted in Duncan 1986) and 1985 (27.6) (Duncan, 1986). 25% yearly growth rate.

Duncan 1985 Comment: "Absolutely incredible growth for Austin radio . . . probably the best mid-sized radio market in the U.S. . . . I don't see how Austin can possible (sic) keep up its growth rate, this projections should be used with caution . . .

1988 Manager's Comment: "This market will soon be in its return to one of America's most desirable radio markets . . . probably the most moved in market in the nation — 5 FM's in 18 months."

1989 Manager's Comment: "Austin is the last Texas market to hit bottom . . . it will take several years but this market will recover in a big way."

1991 Manager's Comment: "Austin hit hard by overbuilt real estate and general Texas economy. Austin radio was victimized by highly leveraged owners with staggering debt service."

80-69	Albuquerque	14.9*	24.0	14	16.5	6.3	5.2	1.06	1.46
58-63	Allentown-Bethlehem	14.2	18.7	10	9	7.4	7.8	1.42	2.09
167-23	Altoona	3.6*	4.7	8	9	10.9	9.0	.45	.52
153-193	Amarillo	6.6*	6.2	12	14.5	7.6	6.0	.55	.43
145-164	Anchorage	9.0*	13.0	12	14	7.4	6.4	.75	.93
122-137	Appleton-Oshkosh	6.5*	10.6	10	11.5	5.9	5.6	.65	.92
155-180	Asheville	3.9	6.1	5	3.5	14.1	13.2	.78	1.74
15-12	Atlanta	75.4	149.6	18	15	4.9	5.8	4.19	10.02
149-132	Atlantic City	6.5*	12.7	10	15	6.4	4.9	.65	.85
106-107	Augusta, GA	6.4*	10.3	12	13	7.4	6.5	.53	.79
89-88	Bakersfield	10.5*	14.2	11	14	6.8	5.6	.95	1.01
16-18	Baltimore	46.6	70.1	18	13.5	4.5	5.3	2.59	5.24
74-84	Baton Rouge	15.9	17.5	11	10	7.9	7.4	1.45	1.75

Market Size (1985/1993	Market 1985	Market Revenues		Viable Stations		Mean Share Points		Estimated Revenue for Mean Station	
		1985	1994	1985	1994	1985	1994	1985	1994
98-126	Beaumont	8.2	8.0	12	9	7.2	6.3	.68	.88
169-239	Billings	4.9	5.1	8	8	11.9	10.5	.61	.64
131-155	Binghamton	5.5	7.7	8	8	10.5	9.7	.69	.96
46-53	Birmingham	19.9	29.9	16	14	5.7	6.0	1.24	2.15
X-227	Bloomington, IL	3.9	5.6	4	4	14.9	14.4	1.01	1.40
129-135	Boise	6.3	12.0	14	13	6.6	6.6	.95	.92
7-10	Boston	88.6	153.8	21	20	3.9	4.3	4.22	7.76

"We have been a bit more selective when it comes to selecting viable stations. In most markets this figure dropped significantly from previous years." Duncan 1995 Definition. (We can infer that Duncan feels he overestimated the number of viable stations in previous years. In some instances the 1985 estimated revenue for mean station would be higher.)

All * are markets where number of viable stations increased despite more selective definition. Only Amarillo (out of eight markets, again Texas) showed a decline in "estimated revenue for mean station."

SOURCE: James H. Duncan, Jr., Duncan's Radio Market Guide, 1986, 1988, 1989, 1991 and 1995 Editions.

Viable Stations: This is the number of stations which, in my opinion, obtain advertising dollars in the market. The other stations are generally those with less than a 1.0 share or stations from small towns far from the metro's principal city. (Duncan 1986 Definition)

All revenue numbers in millions of dollars.

EXHIBIT 3-A

WHAT "REAL" GROWTH DOES FOR RADIO'S PROFITS

Our 7% annual yearly growth rate for radio is predicated on 3.5% inflation and 3.5% real growth. By 2014, this real growth component can have a giant multiplier effect on station profits. Some hypothetical examples:

MARKET SIZE: LARGE

	1994		2014	
Revenue	1.8	Increase of 7% per year	7.2	
Expense	1.0	Increase of 3.5% per year	2.0	
Profit	0.8		5.2	Profits up over six fold
Profit Margin	44.4%		72.2%	

MARKET SIZE: MEDIUM

	1994		2014	
Revenue	1.5	Increase of 7% per year	6.0	
Expense	1.0	Increase of 3.5% per year	2.0	
Profit	0.5		4.0	Profits up eight fold
Profit Margin	33.3%		66.7%	

MARKET SIZE: SMALL

	1994		2014	
Revenue	1.1	Increase 7% per year	4.4	
Expense	1.0	Increase 3.5% per year	2.0	
Profit	0.1		2.4	Profits up 24 fold
Profit Margin	9.1%		54.4%	

CONCLUSION: Profits up far more than increase in revenue 1994 through 2014. Even at 10%, DARS impact on revenues takes only a small bite out of increasing radio profits.

EXHIBIT 4

FAVORITE QUOTES
(SOME WITH COMMENTS)

TOPIC: SATELLITE DARS IMPACT ON LOCAL RADIO

"Logically, if you were to put 60 channels of stereo audio in markets with five or six stations, it would have some impact. But it's not going to be local. So we ought to be able to compete because we're local."

— Dick Ferguson, NAB Radio Board Chairman, Radio & Records, July , 1995.

TOPIC: NATIONAL ADVERTISING

"Nationally, it's easier to buy MTV then radio," said Baltimore-based ad agency Grey Kirk/Van Sant Media Supervisor Jamie Brazeale. "There are thousands of radio stations. You have to buy all of these markets individually and stations individually."

* * *

Deborah Esayian: "[Ad] Agencies do not like radio. They find it complicated, which it is."

— Both quotes from Radio & Records, September 1, 1995.

TOPIC: TERRESTRIAL SMALL MARKET RADIO CONCENTRATION

". . . among the stations sold to create duopolies, 33.2% are in unranked markets. Only 13.7% are in the top 25 markets. 11.6% are in markets 26-50. 19.7% are in markets 51-100 and the second largest chunk, 21.8%, is markets 101-161."